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August 9, 2006

MEMORANDUM

TO: Legislative Education Study Committee

FR: Kathleen Forrer

**RE: STAFF BRIEF: COLLEGE/WORKPLACE READINESS AND HIGH SCHOOL
REDESIGN: ALBUQUERQUE READS: A COMMUNITY-BASED LITERACY
PROGRAM**

The 2006 Interim Workplan of the Legislative Education Study Committee (LESC) includes a presentation on the community-based literacy program *Albuquerque Reads*.

Issues:

- A partnership between the Albuquerque Public Schools (APS) and the Greater Albuquerque Chamber of Commerce, the *Albuquerque Reads* program incorporates the work of volunteer tutors from business and other segments of the community into the APS kindergarten literacy curriculum:
 - After completing a three-hour initial training session, tutors commit approximately 70 minutes a week to the program; each 70-minute segment consists of a 10-minute period of instruction provided to the tutors by the site-based program coordinator followed by two 30 minute sessions in which tutors work one-on-one with students in the program. All tutors must submit to a background check.
 - According to APS, the *Albuquerque Reads* program is aligned with state standards and benchmarks; district standards; the Kindergarten Developmental Progress Review assessment, developed by APS; the findings of the National Reading Panel with regard to the teaching of reading; and the "essential components" of the federal *Reading First* program: phonemic awareness; phonics; vocabulary development; reading fluency, including oral reading skills; and reading comprehension strategies.

- Materials that are designed to assist the tutors and that are aligned to state and district standards have been created by staff from Bel Air Elementary School. These materials include the *Albuquerque Reads Training and Resource Manual* and *Reading, Writing and Skill Development Task Cards*.
- Begun in school year 2003-2004 at Bel Air Elementary School, *Albuquerque Reads* has since been implemented at two additional schools—Atrisco Elementary and Wherry Elementary. APS plans to expand the program to include all 20 of the district's elementary schools currently identified as high poverty, i.e. those schools in which over 85 percent of the students qualify for the federal *Free and Reduced Price Lunch* program.
- APS reports that *Albuquerque Reads* has had a positive effect on student outcomes. At the end of school year 2002-2003, prior to the implementation of the program, 35 percent of the students at Bel Air Elementary School were reading at or above grade level. In contrast, by the end of school year 2003-2004, the first year of implementation at the school, 77 percent of the students were reading at or above grade level. Similar results were recorded for school year 2004-2005, when the number of participating schools had increased to three: at the beginning of the school year, 97 percent of the students entering Bel Air, Atrisco, and Wherry elementary schools were below kindergarten level in reading; but by the end of the year, 72 percent were reading at or above grade level, and an additional 21 percent “were reading almost at grade level.”
- APS estimates that the per-site cost of implementing *Albuquerque Reads* is approximately \$42,000:
 - \$25,000 for a .5 full-time equivalent (FTE) reading teacher;
 - \$12,000 for a full-time educational assistant; and
 - \$5,000 for books and supplies.
- Although most of the funding for the program comes from the district's federal Title I allocation, the 2005 Legislature appropriated \$50,000 to the Public Education Department “for books and equipment” for *Albuquerque Reads*. The Greater Albuquerque Chamber of Commerce also raises money to support the program through corporate donations and fund-raising activities, such as the First Annual “Links for Literacy” Golf Tournament held on May 5, 2006.

Background:

In his 1997 State of the Union address, former President Bill Clinton announced the *America Reads* initiative “to build a citizen army of one million volunteer tutors to make sure every child can read independently by the end of the third grade.” Recognizing that the ability to read is essential to every child's future, the LESC has heard presentations on early literacy during every interim since 2001 and sponsored successful legislation to fund early literacy and to require improved training of teachers in reading instruction.

The *America Reads* program has served as the model for many similar programs across the nation, including *Columbus Reads* in Columbus, Ohio. Both APS and the Greater Albuquerque Chamber of Commerce note that *Albuquerque Reads* is specifically modeled after *Columbus Reads*, which was begun in 1998 by the Chairman and Chief Executive Officer of The Limited, Inc. at the request of the superintendent of the Columbus Public Schools. During the first year *Columbus Reads* was in operation, 400 employees of The Limited tutored 225 kindergarteners in three local elementary schools. Since then, the program has been expanded to include 17 schools in the district.

A 2004-2005 case study conducted by the Council for Corporate and School Partnerships on the *Columbus Reads* program at Ohio Avenue Elementary School, a school with a predominately minority, highly mobile student body, indicated that students reading scores “improved from 52.8 percent pre-test to 87.5 percent post-test, which is significantly above the district average of 31.3 percent.”

Presenters:

Ms. Lynda Espinoza-Idle, Principal of Bel Air Elementary School, and Ms. Sally Giannini, Site Coordinator for *Albuquerque Reads*, will discuss the implementation of the *Albuquerque Reads* program, the impact that the program has had to date on student achievement, and the efforts being made by APS to expand the program to other district elementary schools. Mr. Pat Dee, Committee Chair of *Albuquerque Reads*, Greater Albuquerque Chamber of Commerce, will discuss the chamber’s role in the creation and continued implementation of *Albuquerque Reads*.

Questions the committee may wish to consider:

1. How are tutors recruited and selected to participate in *Albuquerque Reads*?
2. By what date does APS anticipate that *Albuquerque Reads* will be implemented in all district elementary schools identified as high poverty?
3. How much will it cost to expand *Albuquerque Reads* to all of the target schools?
4. What assessments does APS use to measure the efficacy of the program?

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College Board Standards for College Success™
Correlation to New Mexico State Standards
MATHEMATICS

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

		College Board Standards for College Success in Mathematics and Statistics				
		Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
NM State Standards Grade 6	1. NUMBER AND OPERATIONS					
	A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	✓				✓
	B. Understand the meaning of operations and how they relate to one another.	✓				
	C. Compute fluently and make reasonable estimates.	✓			✓	✓
	2. ALGEBRA					
	A. Understand patterns, relations, and functions.	✓	✓		✓	✓
	B. Represent and analyze mathematical situations and structures using algebraic symbols.	✓	✓		✓	
	C. Use mathematical models to represent and understand quantitative relationships.	✓	✓	✓	✓	✓
	D. Analyze changes in various contexts.	✓	✓		✓	✓
	3. GEOMETRY					
	A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematics arguments about geometric relationships.			✓	✓	
	B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	✓		✓		
	C. Apply transformations and use symmetry to analyze mathematical situations.			✓		
	D. Use visualization, spatial reasoning, and geometric modeling to solve problems.			✓		
	4. MEASUREMENT					
	A. Understand measurable attributes of objects and the units, systems, and processes of measurement.				✓	
	B. Apply appropriate techniques, tools, and formulas to determine measurements.				✓	

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

NM State Standards

Grade 6

- 5. DATA ANALYSIS AND PROBABILITY**
A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.
B. Select and use appropriate statistical methods to analyze data.
C. Develop and evaluate inferences and predictions that are based on data.
D. Understand and apply basic concepts of probability.

Grade 7

- 1. NUMBER AND OPERATIONS**
A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
B. Understand the meaning of operations and how they relate to one another.
C. Compute fluently and make reasonable estimates.

2. ALGEBRA

- A. Understand patterns, relations, and functions.
B. Represent and analyze mathematical situations and structures using algebraic symbols.
C. Use mathematical models to represent and understand quantitative relationships.
D. Analyze changes in various contexts.

3. GEOMETRY

- A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematics arguments about geometric relationships.
B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.
C. Apply transformations and use symmetry to analyze mathematical situations.
D. Use visualization, spatial reasoning, and geometric modeling to solve problems.

College Board Standards for College Success in Mathematics and Statistics				
Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
✓	✓			✓
✓				✓
✓				✓
✓				✓
✓				
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓
✓				
✓		✓	✓	
		✓		
		✓	✓	
		✓	✓	

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College Board Standards for College Success™
Correlation to New Mexico State Standards

NM State Standards Grade 7		College Board Standards for College Success in Mathematics and Statistics				
		Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
4. MEASUREMENT						
A. Understand measurable attributes of objects and the units, systems, and processes of measurement.	C				✓	
B. Apply appropriate techniques, tools, and formulas to determine measurements.	C		✓	✓	✓	
5. DATA ANALYSIS AND PROBABILITY						
A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	C*					✓
B. Select and use appropriate statistical methods to analyze data.	C					✓
C. Develop and evaluate inferences and predictions that are based on data.	C					✓
D. Understand and apply basic concepts of probability.	C					✓
Grade 8						
1. NUMBER AND OPERATIONS						
A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	C	✓			✓	
B. Understand the meaning of operations and how they relate to one another.	C*	✓	✓			
C. Compute fluently and make reasonable estimates.	C	✓	✓		✓	
2. ALGEBRA						
A. Understand patterns, relations, and functions.	C		✓			
B. Represent and analyze mathematical situations and structures using algebraic symbols.	C*	✓	✓			
C. Use mathematical models to represent and understand quantitative relationships.	C		✓			
D. Analyze changes in various contexts.	C	✓	✓	✓	✓	✓
3. GEOMETRY						
A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematics arguments about geometric relationships.	C			✓		
B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	C			✓	✓	

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

College Board Standards for College Success in Mathematics and Statistics					
	Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
NM State Standards					
Grade 8					
3. GEOMETRY					
C. Apply transformations and use symmetry to analyze mathematical situations.			✓		
D. Use visualization, spatial reasoning, and geometric modeling to solve problems.			✓	✓	
4. MEASUREMENT					
A. Understand measurable attributes of objects and the units, systems, and processes of measurement.				✓	
B. Apply appropriate techniques, tools, and formulas to determine measurements.	✓			✓	
5. DATA ANALYSIS AND PROBABILITY					
A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	✓		✓		✓
B. Select and use appropriate statistical methods to analyze data.			✓		✓
C. Develop and evaluate inferences and predictions that are based on data.					✓
D. Understand and apply basic concepts of probability.					✓
Grades 9-12					
1. NUMBER AND OPERATIONS					
2. ALGEBRA, FUNCTIONS, AND GRAPHS					
A. Represent and analyze mathematical situations and structures using algebraic symbols.	✓	✓	✓		
B. Understand patterns, relations, functions, and graphs.	✓	✓			
C. Use mathematical models to represent and understand quantitative relationships.	✓	✓		✓	
D. Analyze changes in various contexts.		✓	✓	✓	✓

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

- NM State Standards**
Grades 9-12
- 3. GEOMETRY AND TRIGONOMETRY**
 A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.
 B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.
 C. Apply transformations and use symmetry to analyze mathematical situations.
 D. Use visualization, spatial reasoning, and geometric modeling to solve problems.
- 4. MEASUREMENT**
- 5. DATA ANALYSIS AND PROBABILITY**
 A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.
 B. Select and use appropriate statistical methods to analyze data.
 C. Develop and evaluate inferences and predictions that are based on data.
 D. Understand and apply basic concepts of probability.

College Board Standards for College Success in Mathematics and Statistics				
Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
✓		✓	✓	
		✓		
	✓	✓		
		✓	✓	
				✓
				✓
				✓
				✓

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

		College Board Standards for College Success				
		Reading		Writing		
		Respond to Texts and Put Texts In Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	
NM State Standards Grade 7	READING AND LISTENING					
	A. Listen to, read, react to, and interpret information.	✓		✓	✓	
	B. Gather and use information for research and other purposes.	✓			✓	
	C. Apply critical thinking skills to analyze information.			✓	✓	✓
	D. Demonstrate competence in the skills and strategies of the reading process.	✓	✓	✓		✓
	WRITING AND SPEAKING					
	A. Use speaking as an interpersonal communication tool.	✓			✓	
	B. Apply grammatical and language conventions to communicate.			✓	✓	✓
	C. Demonstrate competence in the skills and strategies of the writing process	✓		✓	✓	✓
	LITERATURE AND MEDIA					
	A. Use language, literature, and media to understand various social and cultural perspectives.	✓		✓		
	B. Identify ideas and make connections among literary works.			✓		

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

		College Board Standards for College Success				
		Reading		Writing		
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	
NM State Standards Grade 8	READING AND LISTENING					
	A. Listen to, read, react to, and interpret information.	✓		✓	✓	
	B. Gather and use information for research and other purposes.			✓		✓
	C. Apply critical thinking skills to analyze information.	✓		✓	✓	✓
	WRITING AND SPEAKING					
	D. Demonstrate competence in the skills and strategies of the reading process.	✓	✓	✓		
	A. Use speaking as an interpersonal communication tool.		✓	✓		✓
	B. Apply grammatical and language conventions to communicate.					
	LITERATURE AND MEDIA					
	C. Demonstrate competence in the skills and strategies of the writing process					
	A. Use language, literature, and media to understand various social and cultural perspectives.	✓		✓		✓
	B. Identify ideas and make connections among literary works.					

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

		College Board Standards for College Success			
		Reading		Writing	
		Respond to Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts
NM State Standards	Grade 9				
	READING AND LISTENING				
	A. Listen to, read, react to, and analyze information.				
	B. Synthesize and evaluate information to solve problems across the curriculum.				
C	C. Demonstrate critical thinking skills to evaluate information and solve problems.	✓	✓	✓	✓
	D. Apply knowledge of reading process to evaluate print, non-print, and technology-based information.				
	WRITING AND SPEAKING				
	A. Communicate information in a coherent and persuasive manner using verbal and non-verbal language.				
C*	B. Apply grammatical and language conventions to communicate.				
	C. Demonstrate competence in the skills and strategies of the writing process to inform and persuade.	✓	✓	✓	✓
	LITERATURE AND MEDIA				
	A. Use language, literature, and media to understand the role of the individual as a member of many cultures.	✓			
C*	B. Understand literary elements, concepts, and genres.		✓	✓	✓

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

		College Board Standards for College Success				
		Reading			Writing	
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	
NM State Standards Grade 10	C*					
	C					
	C*	✓		✓	✓	✓
	C*	✓	✓	✓		✓
READING AND LISTENING						
A. Listen to, read, react to, and analyze information.						
B. Synthesize and evaluate information to solve problems across the curriculum.						
C. Demonstrate critical thinking skills to evaluate information and solve problems.						
D. Apply knowledge of reading process to evaluate print, non-print, and technology-based information.						
WRITING AND SPEAKING						
A. Communicate information in a coherent and persuasive manner using verbal and non-verbal language.						
B. Apply grammatical and language conventions to communicate.						
C. Demonstrate competence in the skills and strategies of the writing process to inform and persuade.						
LITERATURE AND MEDIA						
A. Use language, literature, and media to understand the role of the individual as a member of many cultures.		✓	✓			✓
B. Understand literary elements, concepts, and genres.		✓	✓	✓	✓	✓

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

College Board Standards for College Success									
Reading					Writing				
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	Engage Ideas and Audiences Through Texts	Evaluate and Revise Texts	Present Technically Sound Texts	Research
NM State Standards Grade 11	READING AND LISTENING								
	A. Listen to, read, react to, and analyze information.	✓		✓		✓			✓
	B. Synthesize and evaluate information to solve problems across the curriculum.								✓
	C. Demonstrate critical thinking skills to evaluate information and solve problems.	✓		✓	✓	✓			✓
	D. Apply knowledge of reading process to evaluate print, non-print, and technology-based information.	✓		✓	✓	✓		✓	✓
	WRITING AND SPEAKING								
	A. Communicate information in a coherent and persuasive manner using verbal and non-verbal language.						✓		✓
	B. Apply grammatical and language conventions to communicate.						✓	✓	✓
	C. Demonstrate competence in the skills and strategies of the writing process to inform and persuade.					✓	✓		✓
	LITERATURE AND MEDIA								
	A. Use language, literature, and media to understand the role of the individual as a member of many cultures.	✓		✓	✓				
	B. Understand literary elements, concepts, and genres.		✓		✓				

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
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P	Prerequisite

College Board Standards for College Success									
Reading					Writing				
		Respond to Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	Engage Ideas and Audiences Through Texts	Evaluate and Revise Texts	Present Technically Sound Texts	Research
NM State Standards Grade 12									
	READING AND LISTENING								
	C	✓		✓		✓	✓		
	C								✓
	C	✓	✓			✓			✓
	C*	✓		✓					✓
	WRITING AND SPEAKING								
	C*					✓			✓
	C					✓			✓
	C*					✓	✓		
LITERATURE AND MEDIA									
C	✓								
C*									
C*									
C*									
C*									

MATH COMPETENCIES ON EXIT FROM HIGH SCHOOL
PROPOSED BY NEW MEXICO COMMUNITY COLLEGE AND
UNIVERSITY FACULTY

NOVEMBER 2005

I. Computation

- A. Successful students know basic mathematical operation. They
- A.1. apply arithmetic operations with decimals, fraction and integers (e.g., add and subtract by finding a common denominator, multiply and divide, reduce and perform long division without a calculator);
 - A.2. use exponents and scientific notation;
 - A.3. use radicals correctly;
 - A.4. understand relative magnitude;
 - A.5. calculate using absolute value;
 - A.6. use the correct order of arithmetic operation, particularly demonstrating facility with the Distributive Law and use calculators and computer spreadsheets; and,
 - A.7. know terminology for integers, rational numbers, irrational numbers and complex numbers.
- B. Successful students know and demonstrate fluency with mathematical notation and computation and symbolic manipulations. They
- B.1. correctly perform addition, subtraction, multiplication and division that include variables;
 - B.2. perform appropriate basic operations on sets (e.g., union, intersection, elements of, subsets and complement);
 - B.3. use alternative symbolic expressions, particularly alternative to x (e.g., letters of the Greek alphabet that do not already have specific scientific or mathematical meanings); and,
 - B.4. understand the uses of mathematical symbols as well as the limitations on their appropriate uses (e.g., equal signs, parentheses, superscripts and subscripts).

II. Algebra (Intro and Intermediate I & II)

- A. Successful students know and apply basic algebraic concepts. They

- A.1. use the appropriate properties to manipulate polynomials;
 - A.2. factor polynomials (e.g., difference of squares, perfect square trinomials, difference of two cubes and trinomials such as $6x^2 + 7x - 3$);
 - A.3. simplify and perform basic operations on rational expressions, including finding common denominators (e.g., add, subtract, multiply and divide);
 - A.4. understand rational exponents, roots and their properties;
 - A.5. know basic theorems of exponents and roots;
 - A.6. divide low degree polynomials (e.g., long division); and,
 - A.7. know how to compose and decompose functions and how to find inverses of basic functions.
- B. Successful students use various appropriate techniques to solve basic equations and inequalities. They
- B.1. solve linear equations and inequalities both algebraically and graphically;
 - B.2. solve systems of linear equations and inequalities using algebraic and graphical methods (e.g., substitution, elimination, addition and graphing); and,
 - B.3. solve quadratic equations using various appropriate methods while recognizing real solutions. This includes:
 - B.4a. factoring;
 - B.4b. completing the square;
 - B.4c. the quadratic formula; and,
 - B.4d. graphical methods.
- C. Successful students distinguish between and among expressions, formulas, equations and functions. They
- C.1. know when it is possible or not possible to simplify, solve, substitute or evaluate;
 - C.2. understand that the concept of a function has a specific definition beyond being a type of algebraic expression;
 - C.3. represent functions, patterns and relationships in different ways (e.g., statements, formulas and graphs); and,
 - C.4. understand the language and notation functions (e.g., domain and range).
- D. Successful students understand the relationship between equations and graphs. They
- D.1. understand basic forms of the equation of a straight line and how to graph the line without the aid of a calculator; and,
 - D.2. understand the basic shape of a quadratic function and the relationships between the roots of the quadratic and x-intercepts of the graph of the function.

E. Successful students understand algebra well enough to apply it procedurally and conceptually to a range of common problems. They

- E.1. recognize which type of expression best fits the context of a basic application (e.g., linear equation to solve distance/time problems' quadratic equation to explain the motion of a falling object).

III. Geometry

A. Successful students understand and use both basic plane and solid geometry. They

- A.1. know properties of similarity, congruence and parallel lines cut by a transversal;
- A.2. know how to figure area and perimeter of basic figures;
- A.3. understand the ideas behind simple geometric proofs and are able to develop and write simple geometric proofs;
- A.4. solve problems involving proofs through the use of geometric constructions;
- A.5. use similar triangles to find unknown angle measurements and lengths of sides;
- A.6. visualize solids and surfaces in three-dimensional space (e.g., recognize the shape of a box based on a two-dimensional representation of its surfaces; and recognize the shape of a cone based on a two-dimensional representation of its surface);
- A.7. know basic formulas for volume and surface area for three-dimensional objects; and,
- A.8. know basic terminology of logic including conditional, inverse, converse, contrapositive, and if and only if.

B. Successful students know analytic (i.e. coordinate) geometry. They

- B.1. know geometric properties of lines (e.g., slope and midpoint of a line segment);
- B.2. know the formula for the distance between two points;
- B.3. solve mathematical and real-world problems (e.g., ladders, shadows and poles) that involve the properties of special right triangles with the Pythagorean Theorem and its converse; and,
- B.4. recognize geometric translations and transformations algebraically.

C. Successful students understand basic relationships between geometry and algebra. They

- C.1. know that geometric objects and figures can also be described algebraically (e.g., $ax + by = c$ is the standard form of a line).

IV. Mathematical Reasoning

- A. Successful students know important definitions, why definitions are necessary and are able to use mathematical reasoning to solve problems. They
 - A.1. use inductive reasoning in basic arguments;
 - A.2. use deductive reasoning in basic arguments;
 - A.3. use multiple representations (e.g., analytic, numerical and geometric) to solve problems;
 - A.4. learn to solve multi-step problems;
 - A.5. use a variety of strategies to revise solution processes;
 - A.6. understand the uses of both proof and counterexample in problem solutions and are able to conduct simple proofs; and,
 - A.7. are familiar with the process of abstracting mathematical model from applications and are able to interpret solutions in the context of these source problems.
- B. Successful students are able to work with mathematical notation to solve problems and to communicate solutions. They
 - B.1. translate simple statements into equations (e.g., "Bill is twice as old as John" is expressed by the equation $b = 2j$); and,
 - B.2. understand the role of written symbols in representing mathematical ideas and the precise use of special symbols of mathematics.
- C. Successful students know a select list of mathematical facts and know how to build upon those facts (e.g., Pythagorean Theorem; formulas for perimeter, area, volume; and quadratic formula).
- D. Successful students know how to estimate. They
 - D.1. recognize the relationship between decimal approximations and fractions;
 - D.2. know when to use an estimation or approximation in place of an exact answer;
 - D.3. recognize the accuracy of an estimation; and,
 - D.4. know how to make and use estimations in all applications.
- E. Successful students understand the appropriate use as well as the limitation of calculators. They
 - E.1. recognize when the results produced are unreasonable or represent misinformation;
 - E.2. use calculators for systematic trial-and-error problem solving; and,
 - E.3. plot useful graphs.

- F. Successful students are able to generalize and to go from specific to abstract and back again. They
- F.1. determine the mathematical concept from the context of an external problem, solve the problem and interpret the mathematical solution in the context of the problem; and,
 - F.2. know how to use specific instances of general facts, as well as how to look for general results that extend particular results.
- G. Successful students demonstrate active participation in the process of learning mathematics. They
- G.1. are willing to experiment with problems that have multiple solution methods;
 - G.2. demonstrate an understanding of the mathematical ideas behind the steps of a solution, as well as the solution;
 - G.3. show an understanding of how to modify patterns to obtain different results;
 - G.4. show an understanding of how to modify solution strategies to obtain different results; and,
 - G.5. recognize when a proposed solution does not work, analyze why and use the analysis to seek a valid solution.

ENGLISH COMPETENCIES ON EXIT FROM HIGH SCHOOL

**PROPOSED BY NEW MEXICO COMMUNITY COLLEGE AND
UNIVERSITY FACULTY**

NOVEMBER 2005

I. Reading & Comprehension

- A. Successful students use reading skills and strategies to understand informational texts. They
 - A.1. understand instructions, functional texts, historical documents, government publications, newspapers and textbooks, and interpret visual images;
 - A.2. use monitoring and self-correction, as well as reading aloud, as means to ensure comprehension;
 - A.3. understand vocabulary and content, including subject-area terminology, connotative and denotative meanings, and idiomatic meanings;
 - A.4. exercise a variety of strategies to understand the origins and meanings of new words, including recognition of cognates and contextual clues; and,
 - A.5. identify and interpret the content and primary elements of the types of charts, graphs and visual media that occur most commonly in texts.
- B. Successful students engage in an analytic process to enhance reading comprehension and create personal meaning when reading text. They
 - B.1. are able to annotate, summarize, formulate a personal response, critique, synthesize, evaluate and question, and agree or disagree;
 - B.2. make supported inferences and draw conclusions based on textual features, seeking such evidence in text, format, language use, expository structures and arguments used;
 - B.3. use reading skills and strategies to understand a variety of types of literature;
 - B.4. understand plot and character development in literature, including character motive, causes for actions and the credibility of events;
 - B.5. identify basic beliefs, perspectives and philosophical assumptions underlying an author's work...this includes identifying points of view, attitudes and the values conveyed by specific use of language;
 - B.6. exercise a variety of strategies to understand the origins and meanings of new words, including analysis of word roots and the determination of word derivations; and,
 - B.7. recognize and comprehend narrative terminology and techniques.

ENGLISH COMPETENCIES

- C. Successful students are able to understand the defining characteristics of texts and to recognize a variety of literary forms (genres). They
 - C.1. comprehend the salient characteristics of major types and genres of texts;
 - C.2. understand the formal constraints within different texts and genres and can distinguish between, for example, a Shakespearean sonnet and a poem written in free verse;
 - C.3. are able to discuss with understanding the effects of an author's style and use of literary devices to influence the reader and evoke emotions;
 - C.4. demonstrate familiarity with the concept that historical, social (such as gender and ethnicity), cultural and economic contexts influence form, style and point of view; and that social influences affect an author's descriptions of character, plot and setting; and,
 - C.5. are able to discuss with understanding the relationships between literature and politics, including the political assumptions underlying an author's work and the impact of literature on political movements and events.
- D. Successful students are familiar with a range of world literature. They
 - D.1. demonstrate familiarity with major literary works and periods of English and American literature and their characteristic forms, subjects and authors; and,
 - D.2. demonstrate familiarity with authors from literary traditions beyond the English-speaking world.

II. Writing

- A. Successful students apply basic grammar conventions within the context of their own writing. They
 - A.1. identify and use correctly and consistently parts of speech, including nouns, pronouns, verbs, adverbs, conjunction, prepositions, adjectives and interjections;
 - A.2. use subject-verb agreement and verb tense consistently and correctly;
 - A.3. demonstrate consistent, correct and appropriate pronoun agreement and the use of different types of clauses and phrases, including adverb clauses, adjective clauses and adverb phrases; and,
 - A.4. consistently avoid run-on sentences and sentence fragments.
- B. Successful students know conventions of punctuation and capitalization. They
 - B.1. use commas, ellipses, colons, hyphens, semi-colons, apostrophes and quotation marks correctly; and,

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- B.2. capitalize sentences and proper nouns correctly.
- C. Successful students know conventions of spelling. They
 - C.1. use a dictionary and other resources to spell new, unfamiliar or difficult words;
 - C.2. differentiate between commonly confused words, such as “affect” and “effect”; and,
 - C.3. know how to use the spell-checker and grammar check function in word processing software while understanding the limitations of relying upon these tools.
- D. Successful students use appropriate strategies to write clearly and coherently. They
 - D.1. Pre-writing Elements:
 - D.1.1. know and use several pre-writing strategies, such as creating outlines;
 - D.1.2. know the difference between a topic and a thesis;
 - D.1.3. distinguish between formal and informal styles, for example, between academic essays and personal memos;
 - D.1.4. use a variety of strategies to adapt writing for different audiences and purposes, such as including appropriate content and using appropriate language, style tone and structure; and,
 - D.1.5. understand rhetorical conventions of audience, purpose and occasion.
 - D.2. Composing Elements:
 - D.2.1. construct coherent paragraphs and arrange paragraphs in logical order;
 - D.2.2. use a variety of sentence structures appropriately;
 - D.2.3. present ideas to achieve overall coherence;
 - D.2.4. use words correctly, use words that mean what the writer intends to say, and use a varied vocabulary;
 - D.2.5. demonstrate development of a controlled yet unique style and voice in writing where appropriate;
 - D.2.6. articulate a position through a thesis statement and advance it using evidence, examples and counterarguments that are relevant to the audience or issue at hand;
 - D.2.7. use a variety of methods to develop arguments, including compare-contrast reasoning, logical arguments (inductive-deductive), and alternation between general and specific (e.g., connections between public knowledge and personal observation and experience);

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- D.2.8. use appropriate strategies to write expository essays that employ supporting evidence;
- D.2.9. use appropriate strategies and formats to write personal and business correspondence, including appropriate organizational patterns, formal language and tone; and,
- D.2.10. utilize word processing to aid in the composing process.

D.3. Revision and Editing Elements:

- D.3.1. employ basic editing skills proficiently to identify obvious mechanical errors, clarify and improve the structure of the piece and sharpen language and meaning;
- D.3.2. review ideas and structure in substantive ways to improve depth of information and logic of organization;
- D.3.3. reassess appropriateness of writing in light of genre, purpose and audience;
- D.3.4. use feedback from others to revise written work;
- D.3.5. use rhetorical devices and develop an accurate and expressive style of communication; and,
- D.3.6. use a style manual, such as the Modern Language Association (MLA), to apply writing conventions and to create documentation formats in a manner consistent with the manual.

E. Successful students use writing not only as a product for an audience but also as a process for learning. They

- E.1. use writing as a means of externalizing thought processes to help organize ideas across content areas with the understanding that writing assists thinking and enhances learning; and,
- E.2. know a variety of means for externalizing thought processes, for example note-taking, learning logs, reflective pieces, etc.

III. Research Skills

A. Successful student understand and use research methodologies. They

- A.1. formulate research questions, refine topics, develop a plan for research and organize what is known about the topic;
- A.2. use research to support and develop their own opinions, as opposed to simply restating existing information or opinions;
- A.3. identify claims in their writing that require outside support or verification; and,
- A.4. identify through research the major concerns and debates in a given community or field of inquiry and address these in their writing.

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- B. Successful students know how to find a variety of sources and use them properly. They
 - B.1. collect information to develop a topic and support a thesis;
 - B.2. understand the difference between primary and secondary sources;
 - B.3. understand how to evaluate sources of information to ascertain credibility, origin, potential bias, and overall quality;
 - B.4. seek a variety of print and electronic primary and secondary sources;
 - B.5. understand the concept of plagiarism and how (or why) to avoid it and understand rules for paraphrasing, summarizing and quoting from sources;
 - B.6. appropriately include information from sources, explain technical terms and notations and logically introduce and incorporate quotations; and,
 - B.7. use information from primary and secondary sources and incorporate charts, graphs, tables and illustrations where appropriate.

IV. Critical Thinking Skills

- A. Successful students demonstrate the ability to analyze. They
 - A.1. are able to discuss with understanding how personal experiences and values affect reading comprehension and interpretation;
 - A.2. demonstrate an ability to make connections between the component parts of a text and the larger theoretical structure;
 - A.3. anticipate and address readers' biases and expectations; and,
 - A.4. write to persuade the reader by anticipating and addressing counterarguments.
- B. Successful students demonstrate the ability to think independently. They
 - B.1. are comfortable formulating and expressing their own ideas;
 - B.2. support their arguments with logic and evidence relevant to their audience;
 - B.3. understand fully the scope of their arguments and the claims underlying them; and,
 - B.4. reflect on and assess the strengths and weaknesses of their ideas and the expression of those ideas.

Note: While not addressed in this set of competencies, English faculty support the early development of listening and speaking skills.

State Alignment Systems Exams used for high school achievement and college placement

State	Name of Exam & Administration	Use in HS			Use in Postsecondary		Since date/statute	Notes Source
		AYP	State Rating	Graduation Req.	Advmt.	Admission		
CA	California augments 3 of its 11 th grade standards-based tests with 15 items each, provided by Cal State University System, so students know before 12 th grade if they need remediation in language arts or math. The results are used only for advisement.							
	Early Assessment Program (EAP) of California Standards Test (CST) in grade 11 -- English-language arts -- Algebra II and -- Summative HS Math	No.	N.A.	No.	Yes. Student, school and district receive reports before the end of the calendar year	No.	Yes, advisory for community college placement	2003 Joint initiative of California State University (CSU), the California Department of Education (CDE) and the Cal. State Board of Education (SBE) SB 1653 Early Assessment Program currently before CA senate for CC advisement http://www.cde.ca.gov/ci/ga/ps/eqapindex.asp Program has three components: 1) exams in 11 th grade, 2) 12 th grade college preparation, and 3) teacher P.D. Lupita Cortez Alcalá 916-319-0558 lalcala@cde.ca.gov
CO	Colorado requires every student to take the ACT in April of 11 th grade. The results are included on students' transcripts and may be used for college admission and placement.							
	Colorado ACT Required for all grade 11 students. Administered late April; make-up in late May; results July; released Aug.	No. CO uses Col Stu Assmt Prog in grades 3-10	Yes. (CSAP) Colo. School Acct. Rating	No. Must include on student transcript	Locally determined	IHEs accept CO-ACT score as an "official" ACT score.	2001 C.S. 22-7-409.(1.5)	Russ Masco (Consolidated Fed'l Programs) 303-866-6306. Diane Lefley (Supervisor of Measurement) 303-866-6997 (study in 05 shows .75-.8 correlation with 10 th gr CSAP) (Will present trend data at CCSSO conf June 25-28) Gully, Stanford@cic.state.co.us

State Alignment Systems Exams used for high school achievement and college placement

State	Name of Exam & administration	Use in HS			Use in Postsecondary		Since date/statute	Notes Source
		AYP	State Rating	Grad. Req.	Advsm't.	Admission	Placement	
IL	Illinois requires all students to take the ACT, 2 WorkKeys components and a state science assessment in 11 th grade as part of its state assessment and accountability system. The results are used in determining proficiency for computing AYP and are included on students' transcripts; results may be used for college admissions and placement.							
	Prairie State Achievement Exam (PSAE). Includes ACT, a state-developed science assmt & 2 WorkKeys (reading for info & applied math). Student must have 2 chances in grade 11 to take exam.	Yes.	N.A.	Must take the exam. Goes on perm transcript. No score set for grad but a cut score is used for Prairie State Achievement't Award.		ACT part can be used for admission	2004. (ILCS 5/2-3.64)	Becky McCabe, Student Assessment Division Administrator 217-782-4823 (left msg) Kathy Johnson Regional Prog. Dir. U of Ill 847-446-1275 johnson2@uillinois.edu left msg./e-mail
KY	Kentucky is in the process of establishing a phase-in schedule for 3 required ACT assessments in grades 8, 10 and 11, to be provided at state expense. Results will be used for student advisement in high school and for state school rating system but not yet for AYP. ACT is used for college admission and placement.							
	Phasing in the Kentucky Work & College Readiness Exam: EXPLORE-Gr 8 (06-07) PLAN-Gr 10 fall (06-07) ACT-Gr 11 spr (07) Individual learning plan in Grade 11. Work-Keys - students in grades 10, 11, 12 may take at state expense, no later than 07-08.	No. KY uses CATS in math, reading only (this may change)	Yes, among other pieces (see file)	No.	Yes. Refer to AP or provide intervention, as indicated	ACT, yes	Yes, mandatory Placement req in KY for all higher ed. (CC may choose to use Compass or other for placement)	SB 130 (2006) amending KRS 158.6453 Leg. passed spring 2006 requiring all students in 11 th grade take the ACT, effective spring 2007 Legislation passed Jan 06. Board will determine in Aug. 06 how to implement. Phase- in schedule is not finalized. Need to resolve concern re: modified assessments/ accoms for students w/ disabilities Note: 06 stat also requires standardized end-of-course tests in Algebra I, Algebra II & Geometry by 08-09. Kathy Moore in the office of Roger Ervin 502-564-9853 Re: IHE info contact Com'n on PSE, 502-573-1555. Charles McGrew 502-573-1555

State Alignment Systems Exams used for high school achievement and college placement

State	Name of Exam & Administration	Use in HS			Use in Postsecondary		Since date/statute	Notes Source
		AYP	State Rating	Grad. Req.	Advsmt.	Admission		
LA	Louisiana underwrites cost of any student who voluntarily elects to take EXPLORE, grades 8 & 9, and PLAN, grade 10. Results are used for student advisement in middle and high school. ACT (at student expense) is used for college admission and placement.							
	EPAS: ACT Inc. Educational Planning and Assessment System EXPLORE & PLAN <u>students participate voluntarily</u> Districts sign MOU w/ State Bd of Regents to offer EXPLORE grade 8/9 and/or PLAN grade 10. All districts in state participate.	No. Use LA Educ Assmt Prog 21 & Grad Exit Exam (GEE) 21 (State has correl tables.)	N.A.	No. GEE 21 Math & Eng in Gr 10 GEE 21 Science & Soc Stud in Gr 11 To grad, must pass Math, Eng & either Sci or SoSt	Yes. Regents pay for staff training provided by ACT.	A student cannot be admitted if needs more than one remedial course Cite: website	2001 Based on Louisiana Regents Master Plan for Public Postsecondary Education.	LA Regents website. Heather Devall, EPAS Program Mgr. 225-342-4253 Higher Ed Regents pay full cost of EXPLORE & PLAN Note: state claims approx. 85% - 90% of HS students take and pay for the ACT in grade 11. LA has aligned ACT college readiness standards with state required comprehensive curriculum.
ME	Maine requires all 11 th grade students to take the SAT and expects to use results for AYP purposes. State will work with vendors to develop items or test components (i.e., science) to address areas not covered by the SAT.							
	SAT in critical reading, writing and mathematics 11 th grade April 1 administration Will require PSAT (for grade 10) in 2007.	Yes. pend'g appr. USDoe		No. HS grad reqs established by locally determined assessment of state stds. Revised rules for HS grad will prob req SAT as an element, not determinativ.	School and student receive SAT reports usable for advisem't purposes.	Pursuant to IHE policy.	2006. Maine Statute Title 20-A, Chapter 222, §6202 charges Commissioner of Education to establish a statewide assessment program.	Valerie Seabert 207-624-6834 State pays \$40 per student cost and provides free bus transport and food for Saturday test date. At state expense, high schools provide College Board online test preparation course for all students 9-12 year round.

State Alignment Systems

Exams used for high school achievement and college placement

State	Name of Exam & administration	Use in HS			Use in Postsecondary		Since date/statute	Notes Source
		AYP	State Rating	Grad. Req.	Advsmnt.	Admission		
MI	Michigan will require all 11 th grade students to take the ACT and Workkeys beginning in spring 2007, and will use ACT results for AYP purposes.							
	MICH Merit Exam will be both ACT and Work-keys over 2-day period in spring of 11 th grade	Yes, Pending Appr. USDOE	Report Card incl. school accred which req 95% partic in exams.	Not by state law, but a district may make it a graduation requirement.		Yes.	Depends on institutional policy.	State will pay for the 2-day test and for one re-take Jan Ellis 517-241-4395
	ACT measures English language arts, math, reading, social Studies, science.						Begins 2007 for the class of 2008, pending approval by USDoe for NCLB purposes.	
	Workkeys assessmt of English lang. arts, math, science, & soc. studies						Mich Public Acts 592-596 of 2004. Signed by Gov. in Jan. 2005.	
TX	The Texas Higher Education Coordinating Board has determined college readiness cut scores for several instruments, including the reading, writing and math components of the mandatory 11 th grade state TAKS test. The college readiness cut score is different from the score required for high school graduation. (Cut scores have also been identified for the ACT, COMPASS, ACCUPLACER and the Texas Higher Education Assessment.)							
	A college-readiness cut score for TAKS (Texas Assessment of Knowledge & Skills) mandatory 11 th grade test correlates with college placement test scores (incl. ACT and SAT) to serve as predictor of college success.	Yes.		Yes, a portion of the same test that is used for HS grad.	Study relates scale score on college readiness test to predict'd ACT & SAT-1 scores.	No.	If student achieves cut score on the Higher Ed Readiness Component set by the Texas Higher Ed Coordinating Bd (THECB), is exempt from taking TX Success Init (TSI) assessment required in stat. for state IHEs (\$51,306).	Victoria Young, Dir. of Reading, Writing & Social Studies, TEA. 512-463-9536 (did not speak to her) Technical Digest 03-04, Chapter 8. (See TEA website)
	Applies to TAKS Exit Level (11) Mathematics, English and Writing.			Lower "cut" score for HS grad.			Texas Ed. Code 39.023 (c) and 51.3062 requires college readiness component as part of the state std based assessment (TAKS)	
	Admin. 11 th grade spring semester.			(Note: state cut scores for HS grades is increasing over 3 years from 04 to 07)			(1987 law mandating college readiness test (TASP), Sec 51.306 Texas Ed Code).	